Estes Landfill

Boundaries:

The site is bounded approximately by the Salt River to the north, the 153 Expressway to the east, Magnolia Street to the south, and 40th Street to the west. Groundwater contamination from the landfill extends in an oval shape for approximately one-half mile to the west and north of the landfill.

Site History:

- The Estes Landfill was privately owned and operated from 1953 until 1973 when it was permanently closed. The unregulated landfill was reported to have accepted industrial, commercial, residential and liquid wastes. Liquid wastes which would now be considered hazardous were discharged into ponds excavated in the refuse pits.

- The City of Phoenix (City) acquired the landfill in 1982 by eminent domain in response to repeated flooding of Sky Harbor Airport and other property in 1978-1980. In 1982, the City, in conjunction with local, state and federal flood control and transportation agencies, completed a river channelization project adjacent to the landfill. To complete the project, approximately 30 acres of refuse in the riverbed were excavated and moved to the top of the landfill existing along the southern boundary of the river. The landfill materials were screened before and during excavation for possible hazardous materials, and several cubic yards of material were removed and sent to a hazardous waste landfill in California.

- Groundwater contamination was discovered in two industrial supply wells located down-gradient of the landfill between 1980 and 1982. One on the Bradley Landfill and one on the former Tanner property west of 40th Street. The primary contaminants detected were 1,2-dichloroethene (1,2-DCE) and vinyl chloride (VC), which are degradation products of trichloroethene (TCE) . Groundwater sampling of eight wells, four on the Estes Landfill and four on the Bradley Landfill through the mid-1980s, confirmed the presence of groundwater contamination in the area. The greatest contaminant concentrations were in the vicinity of a former liquid waste disposal pit on Estes Landfill.

- The Estes Landfill site was placed on the WQARF Registry in April 1998 with and eligibility and evaluation (E&E) score of 45 out of a possible 120. Until 1999, the Arizona Department of Environmental Quality (ADEQ) provided regulatory oversight and technical review of site investigations and site activities performed by the City. In March 1999, ADEQ took over responsibility of completing the remedial investigation, feasibility study and other site activities.
  The following activities have been completed at the site:

  - The City of Phoenix submitted a draft remedial investigation (RI) report for ADEQ's review in September 1997.

  - After the ADEQ took over responsibility for the site, the ADEQ completed a RI report on July 30, 1999. The report defined the extent of soil and groundwater contamination emanating from the landfill.

- The Land and Water Use Study was issued on July 9, 2001 as a supplement to the July 30, 1999 RI report.

- With the issuance of the Remedial Objectives (RO) Report on January 15, 2002, the RI report for the site was considered final.

- After completion of the Feasibility Study (FS) for the site, the Proposed Remedial Action Plan (PRAP) was issued for public comment on June 30, 2002.

Site Status:

- On February 25, 2003, the PRAP public comment period ended. ADEQ is currently drafting a responsiveness summary for the comments received on the PRAP.

Site Hydrogeology:

- The site is underlain by approximately 115 to 175 feet of heterogeneous alluvial sediments and several hundred feet of consolidated sedimentary bedrock. The alluvium beneath the site contains sediments (cobbles, gravel, sand and fines) of similar composition with differing hydraulic properties. Three distinct alluvial hydrostratigraphic units have been identified in the following order:
  - < Unit F1, an unconfined, highly permeable aquifer where saturated, from the surface to approximately 60 feet below ground surface (bgs);
  - < Unit F2, a semi-confined, low permeability aquitard from approximately 60 to 90 feet bgs; and
  - < Unit F3, a semi-confined, medium permeability aquitard from approximately 90 feet bgs to the underlying sedimentary bedrock (Unit F4).

- Unit F4 is well consolidated and appears to correlate with the tertiary Tempe Beds and (older) Tertiary Camelshead Formation. Unit F2 is not continuous throughout the site, and where the F2 Unit is absent, Units F1 and F3 are considered to be one unconfined alluvial aquifer.

- The major hydrologic feature in the study area is the Salt River immediately adjacent to the site. The Salt River is normally dry, but periods of above average precipitation and/or releases from upstream reservoirs have caused river flows to occur that have exceeded 100,000 cubic feet per second. These river flows cause rapid recharge to the underlying aquifer.

- Groundwater flow is generally west to northwest across the site during “dry” river conditions and west to southwest during sustained river flow events. Water levels have fluctuated historically between 25 to 80 feet bgs at the site and are significantly influenced by recharge from river flow events. Depth to groundwater is currently approximately 60 feet bgs at the site.

Contaminants:

The current contaminants of concern in soil include arsenic, lead and thallium. The contaminants of concern in groundwater include vinyl chloride, cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), benzene, bis(2-ethylhexyl)phthalate, arsenic, barium, chromium, lead, and manganese. Contaminants of concern at the site may change as new data become available.

Public Health Impact:

Although the groundwater beneath the landfill is contaminated, there are no known drinking water wells within the area of contamination. Drinking water provided by the city of Phoenix is tested regularly to ensure that it meets all state and federal water quality standards.

Community Involvement Activities:

A community advisory board has been formed for the site and meets on a regular basis. These meetings are open to the public. The CAB meeting agendas and minutes can be viewed at http://www.adeq.az.us/environ/waste/sps/reg.html

Information Repository:

Interested parties can review site information at the information repositories at the Ocotillo Library located at 102 West Southern Avenue, (602) 262-6694 and the Burton Barr Central Library located at 1221 North Central Avenue in Phoenix, (602) 262-4636. Site information is also available at the ADEQ main office located at 1110 West Washington Street, Phoenix. Site information is available for review Monday through Friday from 8 a.m. to 5 p.m. To arrange for a time to review the public site file, please call the ADEQ Records Center (602) 771-4378 or (800) 234-5677 (Arizona toll free).

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